Dorsetshire and the Isle of Wight, will always possess a special value and charm. It was among the earliest work of its kind, and to this day may be taken as a model of admirable geological cartography. His memoirs, too, are remarkable for their lucidity of statement and clear presentation of fact; also for a certain literary and antiquarian flavour thoroughly characteristic of the author.

In the last fifteen or twenty years of his official life Mr. Bristow's time and thought were mainly given to the duties of administration required by the high appointments to which he was promoted. Under Sir Roderick Murchison he became one of the two district-surveyors charged with the immediate supervision of the field-work in England and Wales, and on the death of that chief and the promotion of Sir Andrew C. Ramsay to succeed him, Mr. Bristow was appointed Senior Director, an office which he held until his retirement last summer.

Yet in spite of the pressure of his official duties, which grew greater as years advanced, Mr. Bristow contrived to find leisure for various pieces of literary work. Perhaps the best known and most useful of them was his "Glossary of Mineralogy,"—a volume which has long been out of print, and in the preparation of a new edition of which he looked forward to employ himself during the present year. He also edited translations of Figuier's "La Terre avant le Déluge" and Simonin's "La Vie souterraine," besides furnishing mineralogical and geological articles to Brande's "Dictionary of Science, Literature, and Art," to Ure's "Dictionary of Arts, Manufactures, and Mines," and to the geological journals. But it is on his contributions to the Geological Survey that his scientific reputation will mainly rest. His last work was the revision of the proof-sheets of a new edition of his classic memoir on the "Geology of the Isle of Wight"—a volume which is now in the press. He did not live to see its publication, and to receive the congratulations of his friends on its appearance as the crowning work of his scientific career. Mr. Bristow has carried with him to the grave the affectionate regrets of his colleagues and of all who ever came in contact with his genial kindly nature.

NOTES.

DR. ARCHIBALD GEIKIE has been elected a corresponding member of the Physical and Mathematical Section of the Royal Academy of Science, Berlin.

ON Thursday last, the 20th inst., a dinner was given in Paris to Prof. Francis Darwin, by the members of Scientia, a group of French men of science, who are accustomed to meet once a month at a friendly dinner, and to invite a distinguished guest of scientific renown. This dinner was the fourteenth since the foundation of the Society, and among the guests have been MM. Pasteur, de Lesseps, Eiffel, Renan, Janssen, Berthelot, and Chevreul. Mr. F. Darwin was the first foreign guest of the Society. The dinner was attended by many eminent scientific men, among whom were MM. Marey, the physiologist, acting President, Eiffel, de Brazza, Richet, de Lesseps, Giard, and some fifty others. Prof. Marey, in very appropriate terms, recalled the great achievements of Charles Darwin, and spoke enthusiastically of the doctrine of evolution—a fact worthy of note, when it is remembered that Prof. Marey is a member of the Institute. Mr. Darwin expressed cordial thanks for the honour conferred upon him, but, in the opinion of most of the members, adopted too modest a tone. His "Life and Correspondence of Charles Darwin" has won for him high rank in the esteem of the French scientific public.

THIS year the summer meeting of the Institution of Mechanical Engineers will be held in Paris. It will begin on Tuesday, July 2. The following papers have been offered for reading and discussion:—Description of the lifts in the Eiffel Tower, by M. A. Ansaloni, of Paris (this paper will be supplemented by results of working to date, communicated verbally by M. Gustave Eiffel, President of the Société des Ingénieurs Civils); the rationalization of Regnault's experiments on steam, by Mr. J. Macfarlane Gray, of London; on warp weaving and knitting without weft, by Mr. Arthur Paget, Vice-President, of Loughborough; on gas-engines, with description of the Simplex engine, by M. Edouard Delamare-Deboutteville, of Rouen; on the compounding of locomotives burning petroleum refuse in Russia, by Mr. Thomas Urquhart, Locomotive Superintendent, Grazi and Tsaritsin Railway, South-East Russia; description of a machine for making paper bags, by Mr. Job Duerden, of Burnley, communicated through Mr. Henry Chapman, honorary local secretary.

WITH reference to the proposed visit of geologists to the volcanic regions of Italy next October—a scheme to which we referred last week—Dr. J. Foulerton, Secretary of the Geologists' Association, writes to us that the excursion will be under the direction of Dr. H. J. Johnston-Lavis, of Naples, assisted by eminent Italian geologists. Anyone desiring further information on this subject should communicate as early as possible with Dr. Foulerton, at 44 Pembridge Villas, Bayswater, W., sending a stamped and addressed envelope for reply.

AT a meeting on Friday last of the Council of the University College of North Wales, it was decided to open an Agricultural Department at the College in October, and steps were taken with a view to the appointment of a Lecturer in Agriculture. It was stated that the proposal for the formation of dairy schools in connection with the College had met with much support.

FROM the Annual Report of the Principal of the Owens College, Manchester, read on Friday last, at the meeting for the distribution of honours and prizes, it appears that the total number of students has increased during the year from 1269 to 1297, and of these no fewer than 380 are in the Medical School. The number of associates elected during the year was 33: the associates, of whom there are now more than 300 on the roll, are *alumni* of the College, and are only elected after taking a degree at a University. It appears also that during the last year 104 Owens College students passed in arts, science, and law, and 57 in medicine, at the Victoria University. In the London University 51 Owens College students passed in arts, science, and law, and 24 in medicine. Reference was naturally made to the liberal gifts to the College by Sir Joseph Whitworth's legatees. A considerable portion of the most recent extension of the College buildings is devoted to the housing of the old Manchester Natural History and Geological Museums, and the additions made to them since they were handed over to the College. In addition to the sum of £3000 previously given, the Whitworth legatees extended their gift by the further benefactions of £25,000 to the Museum Building Fund, and of £10,000 in augmentation of the Museum Trust Fund.

PRIZES will be distributed at the Medical School, St. Thomas's Hospital, on Tuesday, July 2, at 4 o'clock in the afternoon, by Sir Henry Doulton, almoner of the hospital.

A MEETING of the National Health Society is to be held on Saturday, June 29, in the Town Hall, Westminster, when the Society's certificates gained during the year for proficiency in "domestic hygiene," "sick nursing," and "first aid to the injured," will be presented to the candidates by the Duchess of Westminster.

THE large herbarium of Fungi, transferred by Dr. M. C. Cooke to the Herbarium of the Royal Gardens, Kew, is now for the most part incorporated with the previous collection. The total number of specimens reaches to 46,000, being nearly double that of the Berkeley Herbarium; and these, approximately, represent—

Hymenomycetes	11,000
Gasteromycetes and Myxogastres	2,000
Ustilagines and Uredines	6,000
Discomycetes	6,000
Pyrenomycetes	12,000
Incompletæ	9,000

The number of species has not been calculated. A large number of these are types, and others as important as types; such, for instance, are the individual specimens used in the illustration of "Mycographia." The entire series is a most valuable addition to the national collection at Kew, containing as it does contributions from most of the mycologists of the past forty years—Berkeley, Broome, Bloxam, Cesati, Currey, Curtis, De Notaris, Duby, Ellis, Fries, Kalchbrenner, Leveillé, Montagne, Peck, Ravenal, Rabenhorst, Westendorp, Winter, &c., &c.

IN a British official Report on Brazil, which has just been laid before Parliament, reference is made to the Pasteur Institute founded at Rio de Janeiro on February 9, 1888. Out of 106 persons treated between then and January 8, 1889, only one died, viz. a child who only attended ten times out of twenty-three attendances ordered. In sixty-two instances the dog biting the people treated at Rio was recognized as undoubtedly mad. Besides the 106 cases, 130 other persons were sent away as having nothing the matter with them.

THE National Association for the Promotion of Technical Education has reprinted the excellent series of "Opinions of Practical Men" on the industrial value of technical training, which lately appeared in the *Contemporary Review*. A prefatory note is contributed by Lord Hartington.

WE regret to announce the death of Signor G. Cacciatore, Director of the Palermo Observatory. He died on June 16, in his seventy-sixth year.

PROF. OSCAR HOWARD MITCHELL, of Marietta College, U.S.A., died at Marietta on March 29, in his thirty-eighth year. Prof. Mitchell did some mathematical work which excited the warm admiration of Prof. Sylvester, whose pupil he had been. Of two papers by him in the *American Journal of Mathematics*, Prof. Sylvester wrote: "I should have been very glad, not to say proud, to have been the author of them."

EARLY on Saturday morning an earthquake occurred at Watts Town, in the valley of the Little Rhondda. A shock, which was accompanied by a rumbling noise, shook the walls of houses, and caused the inhabitants to run into the streets in alarm. Crockery was broken, and in one instance children were thrown from their beds. At Pontygwaith the shock was severely felt. Mr. Davis, of Penrhys Cottage, says he was alarmed by the noise, and thought it a more than usually violent explosion in one of the collieries which abound in the valley. The walls of his house shook so that he thought the place was coming down, and he ran into the street. The scene in Llewellyn Street was one of the wildest confusion, women and children partly undressed running hither and thither, the greater number of them being of Mr. Davis's opinion that an explosion had occurred. A considerable time elapsed before the people were induced to go back to bed. The weather had been exceedingly sultry for some days.

WE learn from the *American Meteorological Journal* that the Chief Signal Officer, Washington, has issued the following instructions relating to weather predictions for two or three days:—"In view of the great importance of long-time weather predictions to the business interests of the country, it is hereby directed that, on and after May 1, 1889, the Indications Official shall make, whenever practicable, a general prediction, showing the condition of the weather two or three days in advance. This class of long-time predictions will be confined to such occasions and such sections of the country as from peculiar and persistent meteorological conditions seem to urge successful forecasts. These predictions will not be too much in detail, but will clearly set forth the section of the country for which they are intended, and the days of the week which they will cover. . . . In making these long-time forecasts, the language should be varied according to the necessities of the occasion, but should always be in such form as to convey clearly to the general public the opinions of the Indications Official, and also the degree of positiveness that attaches to his opinions."

KRÜSS AND SCHMIDT'S statement that both nickel and cobalt contain a small percentage of a hitherto unknown element—gnomium—amounting in the case of one specimen of nickel to as much as 2 per cent. (*Ber. der deut. chem. Gesellsch.*, xxii. 11; NATURE, vol. xxxix. p. 325), has not been permitted to pass unchallenged, and quite recently two papers have appeared which tend to show that the supposed new element is non-existent. At the time when they were led to recognize the presence of this common impurity, Krüss and Schmidt were engaged in repeating Winkler's old determination of the atomic weights of nickel and cobalt, in which the ratio Au : Ni or Au : Co was arrived at from the amount of gold precipitated by these metals from neutral solutions of gold chloride. Winkler, in the meantime, has repeated this work with carefully purified materials (*Ber. der deut. chem. Gesellsch.*, xxii. 890), and has not only failed to obtain any evidence of the existence of gnomium, but moreover calls in question the purity of the metallic specimens employed by Krüss and Schmidt. A communication from Dr. Fleitmann to the *Chemiker Zeitung* (xiii. 757) lends considerable support to this view. Adopting the method patented by Krüss and Schmidt for separating this common impurity from nickel and cobalt by extracting the hydroxides of these metals with sodium hydroxide, Fleitmann has examined a number of specimens of commercially pure nickel and cobalt, and, so far from obtaining 2 per cent. of gnomium oxide, has failed to isolate from 50 grammes of material a weighable amount of any impurity which would serve to justify the view that a hitherto unknown element was associated with these metals. Fleitmann points out that when the hydroxides of commercially pure nickel and cobalt are treated with large quantities of sodium hydroxide, impurities go into solution which vary in composition and amount with the source and degree of purity of the metals; these impurities consist of small quantities of the oxides of lead, zinc, arsenic, manganese, molybdenum, silicium, aluminium, cerium, chromium, &c., together with an amount of nickel or cobalt oxide not exceeding 1/20 per cent. of the hydroxide extracted, and when separated from the alkaline solution by the addition of an acid and subsequent precipitation with ammonium carbonate give rise to a highly complex mixture of oxides and acids which can only be separated and identified with considerable difficulty. It is not improbable, therefore, that Krüss and Schmidt have been dealing with some of the constituents of this mixture, and that on further examination gnomium oxide will prove to be a mixture of the oxides of elements already known.

WE learn from the *Daily Inter-Ocean*, of Chicago, that Lieutenant Schwatka has reported the discovery of a large tribe of cave-dwellers in the unexplored regions of Northern Mexico. Their abodes are exactly like the old, abandoned cliff-dwellings of Arizona and New Mexico. So wild and timid were the inmates that it was hardly possible to get near them. Upon the approach of white people they usually fly to their caves or cliffs by means of notched sticks placed against the face of the cliffs. They can also ascend perpendicular cliffs without the use of these sticks if there are the slightest crevices for their fingers and toes. A number of children, playing in a deep cañon, were interrupted, and immediately fled to the low brush and rocks and could not be found, hiding as completely as young quail. These cliff-dwellers are usually tall, lean, and well formed, their skin being very blackish-red, much nearer the colour of the negro than the copper-coloured Indian of the United States. They are said to be sun-worshippers.

In response to demand, a new edition of Prof. A. Gray's small work on "Absolute Measurements in Electricity and Magnetism" will be issued immediately by Messrs. Macmillan and Co. The whole work has been very carefully revised, and several alterations and additions made, which it is hoped will bring it into accordance with the present state of practical electricity, and render it still more useful to students and electrical engineers. The preparation of the second volume of the same author's larger treatise on the same subject is being pushed on at the same time as quickly as possible.

Part VI. of the "Catalogue of the Moths of India," by Colonel Swinhoe and Mr. E. C. Cotes, has just been issued. It deals with *Crambites* and *Tortrices*, and there is also a list of "addenda."

The Elizabeth Thompson Science Fund, established by Mrs. Elizabeth Thompson, of Stamford, Connecticut, "for the advancement and prosecution of scientific research in its broadest sense," now amounts to $25,000. The trustees of the Fund have issued a circular, stating that, as accumulated income is again available, they desire to receive applications for "appropriations" in aid of scientific work. This endowment is not for the benefit of any one department of science, but it is the intention of the trustees to give the preference to those investigations which cannot otherwise be provided for, which have for their object the advancement of human knowledge or the benefit of mankind in general, rather than to researches directed to the solution of questions of merely local importance. Applications for assistance from the Fund, in order to receive consideration, must be accompanied by full information, especially in regard to the following points: (1) precise amount required; (2) exact nature of the investigation proposed; (3) conditions under which the research is to be prosecuted; (4) manner in which the appropriation asked for is to be expended. All applications should be forwarded to the Secretary of the Board of Trustees, Dr. C. S. Minot, Harvard Medical School, Boston, Mass., U.S.A. It is intended to make new grants at the end of 1889. The trustees are disinclined, for the present, to make any grant exceeding $500; preference will be given to applications for smaller amounts. The following is a list of the grants hitherto made:—(1) $200 to the New England Meteorological Society, for the investigation of cyclonic movements in New England (results published in the *American Meteorological Journal* for 1887 and May 1888); (2) $150 to Mr. Samuel Rideal, of University College, London, England, for investigations on the absorption of heat by odorous gases; (3) $75 to Mr. H. M. Howe, of Boston, Mass., for the investigation of fusible slags of copper and lead smelting; (4) $500 to Prof. J. Rosenthal, of Erlangen, Germany, for investigations on animal heat in health and disease (results published in the *Sitzungsber. k. Akad. Wiss.*, 1888, 1309-19; 1889, 245-254; *Arch. Anat. u. Physiol. Suppl.*, 1888, 1-53); (5) $50 to Mr. Joseph Jastrow, of the Johns Hopkins University, Baltimore, Md., for investigations on the laws of psycho-physics; (6) $200 to the Natural History Society of Montreal, for the investigation of underground temperatures; (7) $210 to Messrs. T. Elster and H. Geitel, of Wolfenbüttel, Germany, for researches on the electrization of gases by glowing bodies (results published in the *Sitzungsber. k. Akad. Wiss. Wien.*, xcvii., Abth. 2, 1175-1264, 1889); (8) $500 to Prof. E. D. Cope, of Philadelphia, Penn., to assist in the preparation of his monograph on American fossil Vertebrates; (10) $125 to Mr. Edw. E. Prince, of St. Andrews, Scotland, for researches on the development and morphology of the limbs of Teleosts; (11) $250 to Mr. Herbert Tomlinson, of University College, England, for researches on the effects of stress and strain on the physical properties of matter; (12) $200 to Prof. Luigi Palmieri, of Naples, Italy, for the construction of an apparatus to be used in researches on atmospheric electricity; (13) $200 to Mr. Wm. H. Edwards, of Coalburg, W. Va., to assist the publication of his work on the butterflies of North America (results published in the "Butterflies of North America," third series, Part 5); (14) $150 to the New England Meteorological Society, for the investigation of cyclonic phenomena in New England; (15) $25 to Prof. A. F. Marion, for researches on the fauna of brackish waters; (16) $300 to Prof. Carl Ludwig, for researches on muscular contraction, to be carried on under his direction by Dr. Paul Starke; (17) $200 to Dr. Paul C. Freer, for the investigation of the chemical constitution of graphitic acid; (18) $300 to Dr. G. Müller, for experiments on the resorption of light by the earth's atmosphere; (19) $300 to Prof. Gerhard Krüss, for the investigation of the elementary constitution of erbium and didymium; (20) $50 to Dr. F. L. Hoorweg, for the investigation of the manner and velocity with which magnetism is propagated along an iron bar; (21) $150 to Mr. W. H. Edwards, to assist the publication of his work on North American butterflies.

The additions to the Zoological Society's Gardens during the past week include a Macaque Monkey (*Macacus cynomolgus*) from India, presented by Captain M. S. Riach, 79th Highlanders; a Macaque Monkey (*Macacus cynomolgus*) from the Nicobar Islands, presented by Mr. W. J. McCausland; a —— Wild Dog (*Canis* ——) from Bangay, Bornean Group, presented by Mr. C. T. Kettlewell; a Grey Parrot (*Psittacus erithacus*) from West Africa, presented by Miss L. Davy; a Redwing (*Turdus illacus*), British, a Red-legged Partridge (*Caccabis rufa*), European, presented by Mr. J. C. Clayton; a Purple-crested Touracou (*Corythaix porphyreolophus*) from East Africa, presented by Miss Dolly Kirk; two Canary Finches (*Serinus canarius*), three Teneriffe Chaffinches (*Fringilla tintillon*) from Teneriffe, presented by Mr. E. G. Meade Waldo; a Solitary Thrush (*Monticola cyanus*) from Italy, presented by the Rev. H. A. Macpherson; a Common Trumpeter (*Psophia crepitans*) from Demerara, presented by Mr. C. T. Tudway; four Violaceous Night Herons (*Nycticorax violaceus*) from the West Indies, presented by Dr. A. Boon, C.M.Z.S.; an Alexandrine Parrakeet (*Palæornis alexandri*) from India, presented by Miss J. Wilson; two Bolle's Pigeons (*Columba bollii*) from Teneriffe, a Pallas's Sand Grouse (*Syrrhaptes paradoxus*) from Scotland, deposited; a Specious Pigeon (*Columba speciosa*) from Brazil, a Black Francolin (*Francolinus vulgaris*) from India, a Hawk's-billed Turtle (*Chelone imbricata*) from the West Indies, purchased; two Burrhel Wild Sheep (*Ovis burrhel*), a Yak (*Poephagus grunniens*), a Bolle's Pigeon (*Columba bollii*), a Triangular-spotted Pigeon (*Columba guinea*), a Herring Gull (*Larus argentatus*), a Yellow-legged Herring Gull (*Larus cachinnans*), bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

Recent Determinations of the Amount of Lunar Radiation.—Prof. C. C. Hutchins, formerly of the Johns Hopkins University, now at Bowdoin College, Brunswick, Maine, has recently made some researches in the same field in which Prof. Langley has already worked, viz. the subject of lunar radiation. Prof. Hutchins's first step was the construction of a new form of thermograph, in which a single thermal junction was employed instead of many, the heat rays being condensed upon this one by means of a concave mirror. This com-